UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.: LIMITED
E/ECA/ENV/34
10 October 1986
Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

Fourth Meeting of the Joint Intergovernmental Regional Committee on Human Settlements and Environment

Addis Ababa, Ethiopia, 9-13 February 1987.

LC/NAIROBI

REPORT OF ECA/WMO INTERAGENCY EXPERT CONSULTATION ON ESTABLISHING THE AFRICAN CENTRE OF METEOROLOGICAL APPLICATIONS FOR DEVELOPMENT (ACMAD)*

Bujumbura, Burundi, 6-10 October 1986

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A. PARTICIPATION AND ORGANIZATION OF WORK

1. An ECA/WMO Inter-Agency Expert Consultation on Establishing the African Centre of Metrological Applications for Development (ACMAD) was held at the WMO Regional Office for Africa at Bujumbura, Burundi from 8-10 October 1986. It was organized by WMO jointly with the ECA.

2. The meeting was convened in response to United Nations Economic Commission for Africa (ECA) resolution 585(XXI) of April 1986 which requested the Executive Secretary of the ECA and the Secretary-General of World Meteorological Organisation (WMO) to prepare the draft constitution of the ACMAD centre and submit it through the Joint Intergovernmental Regional Committee on Human Settlements and Environment to the Conference of Ministers of its thirteenth meeting. Other activities considered related to the technical details regarding the Centre, the host country agreement and the financial resources.

3. The meeting was attended by the Members of an ad-hoc group on ACMAD which was established by the WMO's Second Technical Conference on the Management of Meteorological Services in Africa held in Bujumbura, in November 1985. The members of the ad-hoc group were selected on a subregional basis to assist WMO and ECA in the establishment of ACMAD. The group is to be chaired by the President of WMO Regional Association I (Africa). Subregions of Africa were represented as follows:

North African subregion - Egypt
West African subregion - Mali
Central African subregion - Burundi
East African subregion - Kenya
Southern African subregion - Malawi.

4. The meeting was attended by the Members of the ad-hoc group mentioned above and by representatives from UNDP, UNESCO, ECA, WMO and invited observers from the U.K. The list of participants is given in Annex 4.

5. Mr. W. Degefu, the President of WMO Regional Association I (Africa) (RA-I) chaired the meeting and Mr. B. K. Mlenga (Malawi) was elected Rapporteur.

B. AGENDA

6. The following agenda was unaimously adopted:

1. Opening of the meeting.
2. Election of Officers.
3. Adoption of the Provisional Agenda and Organization of Work.
4. Fullscale project document for ACMAD Technical details.

5. Draft Constitution of the Centre,
6. Host Country Agreement and Criteria for Hosting Centre.
7. Financing of the Centre by Member States and donros.
8. Any other business.
9. Adoption of the Report and Closure of the Meeting.

C. PROCEEDINGS

Opening of the Meeting (Agenda item 1)

7. The Director of WMO Regional Office for Africa, Mr. S. Chacowry introduced the chairman of the ad-hoc InterAgency Consultation as previously agreed upon (see paragraph 3 above). Mr. W. Degefu who is President of WMO Regional Association I (Africa) opened the meeting after welcoming the participants and thanking the Government of Burundi for the facilities made available to the meeting and reiterated the purpose of the ad-hoc group meeting as stated in paragraph 2 above, after pointing out the historical background to the establishment of the centre ACMAD.

8. The representative of the Secretary-General of WMO, Mr. S. Chacowry welcomed the participants and stated that the idea of establishing an advanced centre of excellence for the application of meteorology to socio-economic development was first put forward by Prof. G.O.P. Obasi, as a lecturer at a WMO training workshop on meterological services held in Algiers in December 1970. Fifteen years later, it was the spectre of hunger and famine due to the prolonged drought ravaging Africa and another intervention by Prof. G.O.P. Obasi and now Secretary-General of WMO which led to the crystalization of the idea for immediate action to be taken by African Governments. He noted that the idea for creating such a centre has had strong inter-agency support in producing the first project document in 1984 which was discussed for technical details at the WMO Second Technical Conference on the Management of Meteorological Services in Africa in November 1985 at Bujumbura by the Permanent Representatives of WMO's Regional Association I (Africa). He pointed out that a "critical mass" is required in the form of computer and telecommunications facilities, personnel as well as national infrastructure in meteorological services for the success of such an advanced centre. Finally, he expressed thanks to potential donors such as the UNDP and the Overseas Development Administration (ODA) for the interest shown on the project and to the Government of Burundi for its unstinted support in the organization of the meeting.

9. The representative of the Executive Secretary of ECA, Mr. N.H. Ayodele Cole, Chief of Environment, welcomed the participants to the joint ECA/WMO expert group meeting which was detailed to prepare a draft constitution, a draft host country agreement and to examine the technical details and financial resources for finalizing a project document for the establishment of the advanced centre ACMAD. He pointed out that the idea of creating such a Centre came to the attention of African governments at the tenth ECA Conference of Ministers in April 1984 when the Report of the Scientific Round Table on the climatic

situation and drought in Africa was being considered. The African member States decided to establish the Centre ACMAD by ECA resolution 540(XX) at the following (eleventh) Conference of Ministers as a result of strong inter-agency support on preliminary studies. He noted that the spade work for the establishment of the Centre was also receiving strong support from African experts and Permanent Representatives of WMO to ensure the successful functioning of such a Centre.

10. He pointed out that the creation of the Centre ACMAD should be seen within the context of Africa Priority Programme for Economic Recovery (APPER) adopted at the Assembly of Heads of State and Government of the Organization of African Unity (OAU) in July 1985, and which was consolidated as the United Nations Programme of Action for Africa's Economic Recovery and Development 1986-1990, at the thirteenth special session of the General Assembly in May 1986 on the Economic and Social Crisis in Africa. Finally, he pointed out that the primary cause for initiating action to create such a centre was the prolonged drought which was now abating with the return of the rains. However, African governments must be reminded that there were other common climate-determined natural disasters such as floods, tropical cyclones afflicting the continent which need an early warning system and constant monitoring. Also, drought was sure to return to the aridlands of Africa but when, no one can predict without the scientific study that can take place in an advanced centre such an ACMAD.

Fullscale Project Document of ACMAD - Technical Details (Agenda item 4)

11. The meeting reviewed the fullscale project document in the light of additional technical details provided by the WMO consultants recruited under the preparatory assistance project to prepare a suitable implementation plan based on a survey to be undertaken in relation to the establishment of ACMAD. The meeting discussed, in particular, the substantive items concerning the objectives, functions, activities, outputs, the work programme, organizational structure (both internal and external), the manpower, material and financial requirements as well as the economic benefits of ACMAD.

Objectives

12. Therefore the main long-term objective of ACMAD should be to contribute towards the socio-economic development of the African countries particularly by assisting them in their effort towards self-sufficiency in food production, water resource management, and energy. Specifically, ACMAD will:

(a) strenthen the capabilities of national units and promote the development of manpower capabilities in the application and use of meteorological/climatological data;

(b) provide a meteorological/climatological early warning watch system based on the state-ofthe-art methodologies for analysis and prediction;

(c) also develop new and practical methodologies for meteorological applications in order to:

- reduce variability and risk of losses in food crop productions;
- reduce costs and energy inputs in food crop production;
- increase food production and strengthen food security;
- improve water resources management, especially in droughtprone and drought-stricken areas;
- develop alternative renewable energy sources;

(d) provide a better understanding of the atmospheric conditions prevailing in the Africa region which affect critical human activities;

(e) act as an African "centre of excellence2 in meteorological applications to development, including provisions for scientific research and training.

13. The meeting agreed that one of the objectives of ACMAD which should be stressed is the strengthening of the National Weather Services to enable them to take full advantage of development opportunities offered by the Centre in support of their respective national economies. The Centre could in turn make optimum use of existing resources in each country and ensure a mutually beneficial interaction.

14. The meeting noted the role of ACMAD as outlined by the WMO consultants and agreed that the Centre should aim of focussing on developing those aspects of meteorology which are not catered for by the national and subregional centres. The most critical gaps in the applications of meteorology are in the areas of acquiring and adapting agrometeorological techniques which have been successfully applied elsewhere to promote self-sufficiency in food production and in energy resources, to address the many pressing issues of drought and other climate/weatherrelated disasters (like flood, pests control), and to foster crop diversification. Another area of application would be in the evaluation and application of modern numerical analysis and prediction methods as a means of maintaining a continental meteorological/climatological watch system. Statistical and empirical methods should also be tested and adapted for use in the African region. ACMAD would function primarily at the continental scale and serve as a bridge in carrying such knowledge and methods to the subregional and national levels.

15. The meeting agreed that the greatest contribution that ACMAD can make to African economic development was as a "Centre of excellence" in meteorological applications and as such, ACMAD will be the source of advancement of expertise, knowledge and facilities required in Africa to enrich existing training and

development programmes and to stimulate much needed applied research in such areas as tropical meteorology and rain-producing systems. These would require a "critical mass" of experts and technical facilities at the Centre. The meeting felt that ACMAD should be established close to existing professional training and applied research institutions to optimize investments. Consequently, research and training would be by-products of the functions related to establishing "State-of-the-art" facilities and expertise in a meteorological/climatological watch system and application methodologies.

16. The long-term objectives should ensure the total development of the whole meteorological system in a harmonious manner. As such, the Centre should deal with all meteorological phenomena of concern to the continent and be sensitive to the evolving needs of Africa.

Functions

17. The meeting agreed that the primary functional areas of ACMAD should be, namely;

(a) applications development;

(b) meteorological/climatological watch operations,

(c) numerical analysis and prediction development; and

(d) informatics and satallite meteorology technology support.

The meeting considered that efficient and reliable telecommunication facilities for the collection of data and distribution of products were essential.

18. The meeting discussed the proposed Applications development Unit of ACMAD and its activities. The technical requirements would among others, relate to the archiving of all historical and current data, provision of uniform data format, ensuring efficient data/product exchange on existing GTS system and assist in defining new requirements. It will carry out operational functions such as; forecasting yield for crops; identification of appropriate methodologies for operational purposes; determination of meteorological conditions for the occurrence of migratory pests and diseases; and monitoring of continental drought and climatic anomalies. It will conduct specialized application-oriented, short-term courses. Applied research should be carried out to further the objectives of the Centre and as such facilitate and participate in identifying problems areas which require urgent consideration on a continental scale.

19. The meeting discussed the activities and outputs of the Metrological/Climatological Watch System of ACMAD and a preliminary list is annexed (Annex 2). The meeting proposed a few additions to the list as follows: low level wind trajectories, vertical motion analysis (VMA), model output statistics (MOS). The meeting requested members of the ad-hoc group to send in further proposals, if any, to WMO Secretariat before the end of November 1986.

20. The meeting considered the function of the proposed Numerical Analysis and Prediction Development Unit of ACMAD for the transfer and application of numerical methods for conventional and satellite data assimilation, derivation of diagnostic dynamic and kinematic fields from model grid point analysis and prediction, and quantitative precipitation (and other weather elements), analysis and prediction by physical, statistical and empirical methods. The meeting recommended that ACMAD should, as far as possible, use the existing facilities and improve upon them to suit the African condition. The meeting noted that the programme objective and output of the division will be evolutionary. ACMAD would, in the first instance, relay grid point data from world centres and distribute them after appropriate adaptation. The meeting noted that this would lessen the requirement for on-site computing capabilities in the initial phase of implementation as was initially anticipated.

21. The meeting considered the activities of the proposed Informatics and Satellite Meteorology Technology Support Unit of ACMAD which will be responsible for all aspects of informatic system support, large scale computing services, data, management, communications, electronic maintenance and satellite facilities. These are most critical for the operation of the Centre.

Organizational Structure of ACMAD

22. The meeting considered the organization structure of ACMAD which consists of four functional units given in paragraph 17 above and as shown in Annex 1. It is noted that the Director of the Centre is assisted by a Deputy and two Assistant Director who will each control a unit. The Deputy-Director will be responsible for operational activities of the Centre as well as deputising for the Director. The meeting felt that there was a need for stringent financial control and that provision should be made for both internal and external auditing.

23. The meeting addressed the question of the interrelationship between ACMAD and the existing meteorologically-related institutions and the World Weather Watch (WWW) of WMO. The meeting recommended that duplication of effort should be avoided and specialized Regional Centres within the Africa region should be strongly interlinked to ACMAD to receive all necessary products from the Centre for their operational work. Furthermore, as regards the position of ACMAD in the WMO WWW System, it recommended that the ninth session of RA I should consider the matter.

Work Programme and Staff Requirements

24. The meeting considered that a work programme and staff requirements for ACMAD were very much integrated with the internal functional organization produced as a draft organogram for the Centre (Annex 1). It was agreed that a core staff of about 30 professionals and technicians was necessary for ACMAD to take off during its developmental phase of five years. During the preparatory assistance phase, WMO consultants will propose a work programme for ACMAD and draw up job descriptions for the professional and technical staff with regards to the secondment of staff from the United Nations specialized agencies, the meeting was informed of the difficulties involved, unless the organizations were able to use extrabudgetary or overhead resources from technical assistance provisions. The meeting agreed that the general service support staff should be budgeted for, and not left to be provided for by the host government.

Material and Financial Requirements

25. The meeting considered that a total sum of US$ 18.5 million would be about adequate for the level of activity envisaged for the first five year development phase of ACMAD in the project document. However, to make ACMAD full operational in the first phase, additional funding would be required from donors and participating countries. The equipment listed in the Annex of the fullscale project document of ACMAD would cover the operational needs of the Centre in the first phase.

26. The meeting stressed that due consideration should be given to recurring costs, such as running the Centre and the maintenance of facilities. The meeting was informed that the detailed specifications of equipment required for ACMAD will be derived from the results of the joint ECA/WMO study on telecommunications in Africa to be funded by the Federal Republic of Germany.

Draft Constitution of the Centre (Agenda item 5)

27. In introducing this agenda item, the ECA representative stated that he could deal with the paper under four headings, namely, background documents used in drafting the Constitution; general features of the Draft Constitution; matters excluded from the Draft Constitution; and procedure for bringing the Constitution into force.

28. He listed the background documents used as the Report of the WMO Second Technical Conference on Management of Meteorological Services in Africa held in Bujumbura, Burundi, 13-18 November 1985; the Report of the Scientific Round Table, Addis Ababa, April 1986; Preparatory Assistance Project document (RAF/86/026); Draft fullscale project document; and Constitutions of several ECA-Sponsored Institutions.

29. The draft Constitution itself had been couched in general terms as befitted a framework constitutive statute of a dynamic institution. He then proceeded to analyse the draft Consitution Article by Article.

30. No provision was made in the draft Constitution for an Assembly in view of previous resolution of the ECA Conference of Ministers putting a moratorium of indefinite duration, for financial reasons, on the establishment of new institutions. Also, details of Technical Committees, Financing Regulations, Staff Rules did not belong to a Constitution but could be dealt with separately at a later date.

31. The method recommended for bringing the Constitution into force was for the ECA Conference of Ministers to adopt a resolution, with the Constitution annexed to it. Once such a resolution was adopted, it would bind all 50 member States of the ECA without further ado. This must be explained clearly to the Conference of Ministers so that no Member State is taken by surprise when called upon at a later stage to contribute to the budget of the Centre.

32. The Representative of WMO presented to the meeting the views of the WMO Secretariat on the ACMAD Constitution and referred to a draft convention provided to the meeting. He indicated that there was a need to integrate some of its elements in the draft Constitution proposed by ECA which reflected all the major articles needed.

33. In the discussion that followed, the experts noted that the objectives of the Centre should be revised, as necessary, in the light of decisions reached at this Expert Group meeting. The following amendments were recommended in the draft constitution:

- the draft would spell it out clearly that the supreme body of ACMAD is the ECA Conference of Ministers (to which the Governing Board reports through the Joint Intergovernmental Regional Committee on Human Settlements and Environment);

- sub-paragraph (c) of paragraph 2 of Article 5 would be re-drafted so as to specify that the ten representatives from each of 5 ECA subregions would be persons well versed and experienced in the theory and practice of meteorology and would be selected on the grounds only of such technical competence;

- the respective roles of ECA and WMO visa-vis ACMAD would be spelt out clearly in the Constitution (see Article 10)

- the OAU would be included in the membership of the Board of Governors of ACMAD [see Article 5, paragraph 2(e)]

- sub-paragraph (a) of paragraph 2 of Article 5 should be amended to provide for the Chairman of the Board of Governors to be elected from among the representatives of the Member States;

- the representatives referred to in sub-paragraphs (e) to (h) of paragraph 2 of Article 5 would participate in the work of the Board of Governors in an observer capacity;

- article 6 would be amended to reflect the procedure to be followed in between meetings of the Board of Governors;

- paragraph 2 of Article 6 would be deleted;

- the functions and powers of the Executive Director would be reviewed to enable him to function in the absence of the Chairman of the Board (see Article 7)

- paragraph 2 of Article 7 would be amended by substituting "four years" for "two years" in lines 2 and 3;

- the "junior posts" referred to in subparagraph (e) of paragraph 4 of Article 7 shall be specified;

- paragraph (a) of Article 9 shall be amended by inserting the world "timely" between "the" and "collection" in the first line;

- "Centre" shall be substituted for "institute" in line 1 of paragraph 1 of Article 12;

- Article 13 shall be clarified.

34. Finally, the meeting agreed that since ECA and WMO had been unable, because of time constraints, to harmonize their two draft Constitutions, they would meet at a mutually agreed place and date to finalize an agreed text having regard to the amendments made to the ECA draft Constitution which was the subject of the above disucssion. The revised version of the draft constitution is annexed to this report (Annex 3).

Draft Hosting Agreement between ACMAD and the Host Country - Criteria for the Location (agenda item 6)

35. The ECA representative explained that this was a standard agreement for ECA-sponsored institutions and recommended its adoption. The meeting agreed to it.

Criteria for the location of the Centre

36. The meeting reviewed the technical requirements for the location of the Centre ACMAD submitted by WMO. After in-depth discussions, it was agreed that the host country should have the following facilities:

- A University which has recognized capability in training and in applied research, particularly in tropical meteorology and other essential disciplines such as Mathematics, Physics and Computer Sciences;

- A Regional Telecommunications Hub (RTH) with functional automated MSS and a Regional Meteorological Centre (RMC), located preferably in the trunk circuit of the WMO Global Telecommunications System (GTS) in order to have ready access to meteorological data available on the WMO World Weater Watch (WWW) Systems;

- Adequate data processing facilities (computer hardware, software, expertise for the operations, and maintenance of the systems, etc), to be used by ACMAD during the initial stages for its needs and requirements;

- Satellite data receiving and processing capabilities;

- Ready access to research and applications institutions both in Africa and outside the region, in agriculture, forestry, water resources management, renewable energy and environment aimed at tackling the problems of drought, desertification and food self-sufficiency;

- Physical facilities to accomodate the Centre, with possibilities of expansion.

37. The meeting also agreed that these facilities should all be available and fully operational in the host country to permit the establishment of ACMAD during 1987.

38. The meeting noted that the ECA Conference of Ministers had directed the Executive Secretary of ECA to investigate the possibility for potential candidates for hosting ACMAD. It recommended that, in view of the interest expressed during the last session of the ECA Conference of Ministers, and considering the results of the first preliminary study regarding potential host countreis, the ECA and WMO Secretariats consult, as soon as possible, the governments of these countries on their interest to host ACMAD. The ECA and WMO Secretariats should ensure that missions are carried out to these countries who would express an interest to host the Centre with the view of providing the ECA Conference of Ministers with all the details required on the the existing facilities to enable them to decide objectively on the location of ACMAD.

39. The meeting further recommended that the attention of the ECA Conference of Ministers be drawn on the critical importance of the technical facilities to be available in the host country, if the establishment and operation of ACMAD are to be fulfilled successfully. The initial investments required could also be substantially increased depending on the site of the Centre.

Financing of the Centre by Member States and Donors (agenda item 7)

40. The representative of WMO noted that African countries were at present undergoing severe financial strain due to the current social and economic crisis. In order to ensure continued financing of ACMAD, WMO was of the opinion that Member States should contribute to the Centre through an

Intergovernmental organization such as the OAU. He cited examples of the AGRHYMET Centre and the ASECNA training schools whose operations are financed by the contributions of Member States through the parent organizations, namely CILSS and ASECNA respectively. Considering the present economic difficulties encountered, WMO would suggest that the take off of ACMAD could be ensured provided sufficient external support were made available to the Centre in the initial 5-year period. The Members, however, should provide their full commitment to the Centre from the start, and progressively increase their contribution.

41. The representative of ECA noted that financing was the most critical problem common to all ECA-sponsored institutions at the initial phase because of foreign exchange problems. Generally, the level of contribution is based on a modified OAU formula agreed upon at the ECA Conference of Ministers when the matter was being considered.

42. The meeting agreed that an ECA/WMO study on the financing scheme of the Centre be carried out as soon as possible in time for submission to the appropriate ECA bodies. This was necessary to ensure an interrupted flow of products from the Centre when member States begin to depend on the meteorological outputs and economic development.

43. The representative of the United Kingdom's Overseas Development Administration (ODA) said he could not commit his government at this stage, however, he expressed strong interest to assist the Centre's training programme and the access to computer facilities, provided the organization of the Centre was meeting the objectives of ACMAD in a cost-effective way.

44. He recommended that the social and economic benefits of ACMAD should be clearly spelt out to the politicians and decision-makers with regard to the present economic and social crisis in Africa. Finally he mentioned that ECA/WMO contact other potential donors such as the World Bank who was developing a programme on agricultural research in Africa for food self-sufficiency.

45. The representative of UNDP stated that UNDP has not committed itself to finance the project. However, he reconfirmed the interest of the Regional Bureau for Africa in the concept, which has already been shown by funding the preparatory assistance phase of the project.

46. The representative of ECA informed the meeting that a proposal for funding ACMAD was submitted by ECA to UNDP under its fourth regional programme. Decision on the selection of the proposals for UNDP funding will be taken by the ECA Member States at their extra-ordinary session on 13-14 October 1986. The ad-hoc meeting expressed the hope that a positive response will be received on this proposal for UNDP to fund ACMAD.

47. The meeting expressed its gratitude to the ODA and the UNDP for their continuing interest and support to ACMAD.

Any other business (agenda item 8)

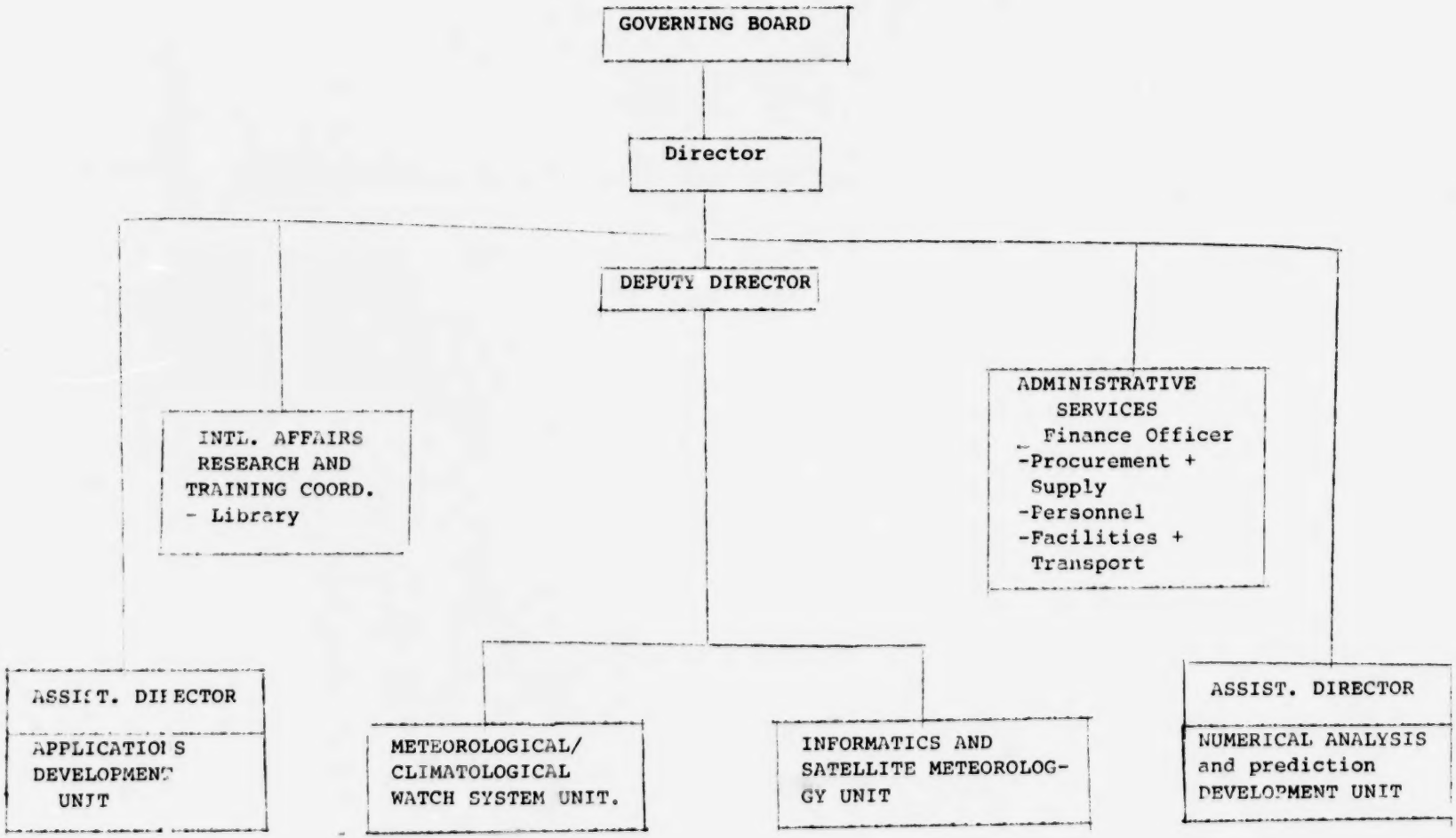
48. The meeting recommended that should further assistance be required to finalize the preparatory phase and the necessary arrangements towards the implementation of ACMAD within the preparatory assistance project phase, the ad-hoc Working Group may again be called upon to provide the necessary support and advice.

Closure of the meeting (agenda item 9)

49. The Chairman thanked the rapporteur, the participants, the consultants, the United Nations agencies represented and the participants of ODA and the British Meteorological Office for their useful contributions to the success of the meeting. He also thanked the staff of the Regional Office for the support provided and in particular, he requested Mr. E. Kayengeyenge, Permanent Representative of Burundi with WMO to convey the gratitude of the meeting to the Burundi Government for all the arrangements made in support of the meeting.

50. The meeting was closed at 2100 hours on 10 October 1986.

A C M A D O R G A N O G R A M



Objective:

A. Maintain a Meteorological/Climatological Watch System for Africa (ACMAP)

Activities & Outputs

A.1 Prepare for dissemination and digital archive the following operational analysis and monitoring products on a continental basis:

A.1.1 Daily Continental Synoptic Analysis 00z and 12z (sfc and U/A)

A.1.1.1-A.1.1.7 (Sfc, 850, 500, 200, Trop/VWS based on the grid point objective: analysis from a world centre)

A.1.2 Daily Continental Analysis of Significant Weather Climate and Meteorological Structures and Fields for Applications (numerically and subjectively derived).

A.1.2.1 24hr. Rainfall and cloudiness (per cent avial. sunshine) at 12z using synoptic data plus satellite, RAINSAT, radar, and special diagnostic techniques

A.1.2.2 Rain Producing Systems diagnotic fields at 12z including stability, parameters, moisture and heatflux fields, kinimatic fields, (e.g. 850 and 200 mb stream function and velocity potential, derived convergence/divergence and vertical velocity)

A.1.3 Daily Climatological Bulletins (Temp, pcpn, degree days, soil moisture/temp, per cent normal todate, etc. for selected continental stations) 12z

A.1.4 Weekly, Monthly and Seasonal Continental Climat Monitoring Products

A.1.4.1 Historical (space and time averaged) meteorological fields (sfc and UA as related to tropical meteorological analysis and prediction)

A.1.4.2 Accumulative meteorological and climatological indicators (per cent normals, outgoing long-wave radiation, degree days, soil moisture, drought indice for particular season todate)

A.2 Prepare for dissemination and digital archive Continental Prognosis and Assessments:

A.2.1 Daily Continental Weather Prognosis for 24, 48 and 72 hr. (sic/500, QPFs, per cent possible sunshine, maximum/minimum temperature, etc.) adapted from a world centre NWP products.

A.2.2 Daily continental Rain Producing System prognosis (Tropical Storms, ITCz, Easterly waves, plus meaned fields of sfc and 200 mb stream function and velocity potential, stability parameters, etc.)

A.2.3 Weekly, Monthly and Seasonal Continental Climat Monitoring Outlooks per cent seasonal normal, mean heating and evaporation (10 day and monthly
(CMOs as per WMO CSMs for Tropical Regions)

A.3 Acquire, Operate and Maintain Meteorological Informatics and Data Systems, (ACMID)

A.3.1 Computer Communications Processing Services (LAN and Mainframe)

A.3.1.1 Systems analysis and programming services

A.3.1.2 Computer/Communications Operations

A.3.2 Remote Sensing Laboratory (HRPT, NOAA, METEOSAT, METEOR, TOVS, etc.) - Primary user display systems

A.3.3 Data Management Services

A.3.3.1 Quality Assurance, processing and archiving

A.3.3.2 Documentation, advice and delivery of data services (internal and external)

A.3.4 Advance Technology Maintenance Depot

A.3.4.1 Advanced Meteorological Data Acquisition Systems Technologist

A.3.4.2 Digital Electronics Engineering and Maintenance Technologist

A.3.4.3 Maintenance Laboratory Facility

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Annex 3

United Nations Economic
Commission for Africa

World Meteorological Organization

DRAFT CONSTITUTION OF THE

AFRICAN CENTRE OF METEOROLOGICAL APPLICATIONS FOR DEVELOPMENT (ACMAD)

November 1986

WHEREAS by its resolution 540 (XX) the Conference of Ministers of the United Nations Economic Commission for Africa on behalf of the Member States of the United Nations Economic Commission for Africa, resolved that an African Centre of Meteorological Applications for Development should be established for the purpose of improving the understanding of atmospheric and climatic processes over Africa, collecting, analyzing and disseminating meteorological and hydrological information, providing a meteorological watch and early warning system over Africa and promoting the training of African scientists and technicians in the application of meteorology for development;

WHEREAS practical and useful actions can presently be taken to alleviate the effects of drought and of other atmospheric phenomena by applying methodologies based on a thorough knowledge of the impact of meteorological factors on food production, on the availability of water resources and on new and renewable sources of energy;

WHEREAS by the said resolution 540 (XX) the African Centre of Meteorological Applications for Development is to be operated with the support of the Member States of the United Nations Economic Commission for Africa and of the World Meteorological Organization;

AND WHEREAS by virtue of the said resolution 540 (XX) the Member States of the United Nations Economic Commission for Africa have agreed to establish the African Centre of Meteorological Applications for Development for the purpose and in the manner set out in the preceding paragraphs;

NOW THEREFORE and on behalf of the Member States of the United Nations Economic Commission for Africa, **IT IS HEREBY AGREED AS FOLLOWS:**

ARTICLE 1

Establishment and membership of the Centre

1. The African Centre of Meteorological Applications for Development (hereinafter referred to as "the Centre"), is hereby established.

2. The Member States of the Centre shall be the Member States of the United Nations Economic Commission for Africa (hereinafter referred to as "the Member States").

ARTICLE 2

Objectives and Fundtions of the Centre

1. The objectives of the Centre shall be:

(a) To promote and develop the application of meteorological date and information so as to enhance the economic and social development of the Member States, assist in the investigation and mitigation of the effectss of weather phenomena, improve the knowledge of the anomalies of the weather and climate of the Member States and foster the proper conservation of the natural resources of the Member States;

(b) To assist the Member States to achieve self-sufficiency in food production, water resources management, and utilization of new and renewable sources of energy;

(c) To act as an African Centre of Excellence in meteorology and its application to development, and as a resource centre to stimulate applied scientific research, especially in tropical meteorology and in rain-producing systems, and to enrich existing training and development programmes;

(d) To strengthen national weather services to enable them to take full advantage of development opportunities offered by the Centre in support of the respective national economies in order to ensure the total development of the whole meteorological system of the Africa region in a harmonious manner;

(e) To develop those aspects of meteorology which are not catered for by the national and sub-regional centres, particularly in the areas

of acquiring and adapting agrometeorological techniques successfully applied elsewhere in aid of self-sufficiency in food production and energy; and to address the many pressing issues of drought and other climate/weather related disasters (such as floods, cyclones, storms, hurricanes, pest outbreak).

2. For the purposes set out in paragraph 1 of this Article, the Centre shall, in particular, perform the following functions:

(a) Strengthen the capabilities in the application and use of meteorological/climatological data;

(b) Provide a meteorological/climatological early warning watch system based on the state of the art for analysis and prediction;

(c) Develop new and practical methodologies for meteorological applications in order to:

(i) Reduce variability and risk of losses in food crop production;

(ii) Reduce costs and energy inputs in food crop production;

(iii) Increase production and strengthen food security;

(iv) Improve water resources management, especially in drought-prone and drought-stricken areas;

(v) Develop alternative renewable sources of energy;

(vi) Provide a better understanding of the atmospheric conditions prevailing in the Africa region which affect critical human activities;

(d) To perform on a continental scale to bridge the gaps between subregional

and national units through supporting activities in applications development, meteorological/climatological watch operations, numerical analysis and prediction development, and in informatics and satellite meteorology technology in order to identify and solve urgent regional climatic problems;

(e) The archiving of all historical and current data, provision of uniform data format, ensuring of efficient data/product exchange on existing Global Telecommunications System (GTS) and assist in defining new requirements;

(f) Provide regularly appropriate forecast of crop yields, identify appropriate methodologies for operational proposals, and meteorological conditions for the occurrence of migratory pests and diseases, and monitoring of continental drought and climatic anomalies;

(g) Provide training, including the organization of workshops, seminars, training missions, etc. for African scientists and technicians in the applications of meteorological data and information to economic and social development;

(h) Undertake research for the better understanding of the atmospheric and climatic processes which cause rains, drought, tropical cyclones and floods, storms and other significant meteorological phenomena; and

(i) Undertake such other activities as may be designed to further the objectives of the Centre.

ARTICLE 3

Headquarters of the Centre

1. The headquarters of the Centre shall be determined by the Conference of Ministers of the United Nations Economic Commission for Africa (hereinafter referred to as "the Conference of Ministers").

2. The Centre shall enter into an agreement with the host Government of the Member State where the headquarters of the Centre shall be established concerning the provision and grant, as the case may be, by the former of such adequate premises, facilities and services and privileges and immunities as may be required for the effective operation of the Centre.

ARTICLE 4

Organs of the Centre

The Centre shall have the following organs:

(i) A Board of Governors;

(ii) The General Directorate; and

(iii) Such other technical, scientific, financial and administrative bodies as may be necessary for the efficient discharge of its functions.

ARTICLE 5

The Board of Governors: composition, functions and meetings

1. The Board of Governors shall be the supreme policy-making organ of the Centre.

2. The Board of Governors shall be composed as follows:

(a) The Executive Secretary of the United Nations Economic Commission for Africa (hereinafter referred to as "the Executive Secretary") who shall be ex-officio Chairman of the Board of Governors, (OR A Chairman who shall be elected from among the members of the Board representing the Member States);

(b) The Vice-Chairman who shall be elected from among the members of the Board representing the Member States;

(c) A representative each of two Member States from each of the five subregions of the United Nations Economic Commission for Africa selected by the Conference of Ministers, each such representative shall be selected on the basis of his or her expertise and experience in meteorology;

(d) A representative of the Government of the (host country);

(e) A representative of the Organization of African Unity (OAU), without the right to vote;

(f) A representative of the World Meteorological Organization (WMO), without the right to vote;

(g) Representatives of international organizations or institutions interested in the activities of the Centre such as the United Nations Development Programme (UNDP), the Food and Agriculture Organization (FAO) and the United Nations Environment Programme (UNEP), by invitation of the Board of Governors without the right to vote;

(h) Donor agencies and eminent experts may also attend meetings of the Board of Governors by invitation of the Board as observers without the right to vote.

3. The Director-General of the Centre shall act as Secretary of the Board of Governors.

4. In selecting the members of the Board of Governors referred to in sub-paragraph (c) of paragraph 2 of this Article, the Conference of Ministers shall have regard t the necessity of maintaining a fair geographical distribution of selection among the Member States.

5. The members of the Board of Governors selected under subparagraph (c) of paragraph 2 of this Article shall hold office for a period of four years and may be eligible for re-election provided, however, that in making selections for the first time, the Conference of Ministers shall direct that one-half of the Member States selected by them shall retire two years after they have been selected and shall be replaced by the same number of Member States selected by the Conference of Ministers for the purpose.

6. The members of the Board of Governors referred to in subparagraph (c) of paragraph 2 of this Article, shall be persons who are competent and experienced in the activities of the Centre.

7. The Board of Governors shall:

(a) Prescribe the general principles and policies governing the operations of the Centre and give directives of a general nature as to the implementation of such principles and policies;

(b) Propose the work programmes of the Centre and their corresponding budgets, subject to the approval of the Conference of Ministers;

(c) Prescribe conditions for the admission of persons to undergo training provided by the Centre;

(d) Review and approve the annual reports of the DirectorGeneral of the Centre on the activities of the Centre;

(e) Appoint professionally qualified auditors to audit the accounts of the Centrte;

(f) Examine and approve the financial report and accounts of the Centre for the preceding year;

(g) Prescribe the financial, staff and other rules and regulations governing the administration of the Centre;

(h) Adopt its own rules of procedure;

(i) Determine, apart from the office of the Director-General of the Centre, the other offices of the Centre;

(j) Submit through its Chairman a report to the Joint InterGovernmental Regional Committee on Human Settlements and Environment of the United Nations Economic Commission for Africa (hereinafter referred to as "the Joint Committee"), for its consideration, approval and presentation to the Conference of Ministers, annual reports on the activities of the Centre;

(k) Appoint the Director-General and other senior staff of the Centre;

(l) Establish such technical, scientific, financial and administrative committees as may be necessary for the efficient discharge of the functions of the Centre;

(m) Convene periodically meetings of donors to consider the funding the activities of the Centre and;

(n) Perform such other funcxtions as may be necessary for the efficient discharge of the functions of the Centre.

8. The Board of Governors shall meet in ordinary session once a year and may hold extraordinary sessins at the request of its Chairman or of one-third of its members.

ARTICLE 6

The Chairman of the Board of Governors

1. The Chairman of the Board of Governors shall:

(a) Cause to be prepared the draft agenda of the meetings of the Board of Governors;

(b) Convene and preside over the meetings of the Board of Governors;

(c) With the approval of the Board of Governors, solicit financial and other resources from the United Nations and its specialized agencies or other inter-governmental organizations, governments, non-governmental organizations and other sources.

2. In the absence of the Chairman of the Board of Governors, the functions set out in paragraph 1 of this Article shall be performed by the Vice-Chairman.

ARTICLE 7

The General Directorate

1. The General Directorate shall be headed by the Director-General who shall be the Chief Executive and Administrative Officer of the Centre.

2. The Director-General of the Centre shall be appointed as provided for in this Constitution for a period of four years subject to renewal for succeeding periods of four years each.

3. The Director-General of the Centre shall act as the legal representative of the Centre.

4. Subject to such directions of a general nature as the Board of Governors may give, the Director-General of the Centre shall have responsibility for the planning, organization and direction of the technical activities, scientific research, training, advisory and other activities of the Centre. He shall in particular:

(a) Be responsible for the organization and administration of the centre;

(b) Submit for consideration of the Board of Governors the work programmes and corresponding budgets of the Centre;

(c) Be responsible for the carrying out of the activities of the Centre in accordance with the approved work programmes and corresponding budgets of the Centre;

(d) Submit for the approval of the Board of Governors annual reports on the activities and the accounts of the Centre;

(e) Subject to the staff and administrative rules and regulations of the Centre and to such directions as the Board of Governors may give, select and appoint staff other than those provided for under sub-paragraph (k) of paragraph 7 of Article 5 of this Constitution;

(f) Establish and maintain such contacts with Governments, the United Nations and its specialized agencies and other organizaitons or institutions as may be necessary or desirable for the achievement of the objectives of the Centre;

(g) Undertake such other assignments or activities as may be determined by the Board of Governors.

5. The Director-General and the other staff of the Centre shall neither seek nor accept any instructions, remunerations or gifts from any government or authority or from any source external to the Centre and shall refrain from any other acxtion which might reflecxt on their position as international officials.

6. The Member States undertake to respect the international character of the responsibilities of the Director-General and other staff of the Centre and not to seek to influence any of their nationals in the discharge of such responsibilities; provided that this shall not preclude the secondment to the Centre of staff by Governments or organizations.

ARTICLE 8

Status, capacity, privileges and immunities

1. To enable it to achieve its objectives and perform the functions with which it is entrusted, the Centre shall possess in the territory of each Member State juridical personality in international law. To these ends, the status, capacity, privileges, immunities and exemptions set forth in paragraphs 2 to 12 of this Article shall be accorded to the Centre in the territory of each Member State.

2. The Centre shall for the purposes of this Constitution have the capacity:

(a) To enter into contracts;

(b) To acquire and dispose of immovable or movable property; and

(c) To institute legal proceedings.

3. The Centre, its property and assets shall enhoy immunity from every form of legal process except insofar as in any particular case it has, through the Director-General of the Centre, expressly waived its immunity;

Provided however that no measure of execution shall be taken against the property and assets of the Centre without the consent of the Direcxtor-General of the Centre.

4. The headquarters of the Centre shall be inviolable. The property and assets of the Centre shall be immune from search, requisition, confiscation, expropriation, and any other form of interference whether by executive, administrative judicial or legislative action.

5. The archives of the Centre, and in general all documents belonging to it or held by it, shall be inviolable.

6. The Centre, its property, assets, income and transactions shall be exempt from all taxation and from customs duties and prohibitions and restrictions on imports and exports necessary for the exercise of its functions. The Centre however shall not be exempt from the payment of charges for services rendered.

7. The members of the Board of Governors and representatives of the Member States who are not otherwise officials of the United Nations or of the specialized agencies of the United Nations, shall enjoy such privileges and immunities as are provided for mutatis mutandis by Article IV of the Convention on Privileges and Immunities of the United Nations.

8. The staff of the Centre who are not otherwise officiels of the United Nations or of the specialized agencies of the United Nations shall enjoy such privileges and immunities as are provided for by Article V of the Convention on Privileges and Immunities of the United Nations.

9. Without prejudice to the foregoing provisions, the Member States undertake to accord to all representatives of the Member States, all the staff of the Centre and experts providing advice or assistance to the Centre, such facilities and courtesies as are necessary for the exercise of their functions in connection with the Centre.

10. The Director-General of the Centre shall have the right and duty to waive the immunity of any staff of the Centre who is not an official of the United Nations or of a specialized agency of the United Nations, in cases where in his opinion the immunity would impede the cause of justice and can be waived without prejudice to the interests of the Centre.

11. All persons undergoing training or taking part in a scheme for the exchange of personnel at the Centre in pursuance of the provisions of this Constitution and who are not nationals of the Member States concerned, shall have the right of entry into, sojourn in, transit through and exit from the territory of each Member State when such entry, sojourn, transit or exit is necessary for their assignment. They shall be granted facilities for speedy travel; visas, where required, shall be granted promptly and free of charge.

12. The Centrte shall co-operate at all times with the appropriate authorities of the Member States to facilitate the proper administration of justice, secure the observance of national laws and prevent the occurrence of any abuse in connection with the privileges, immunities and facilities mentioned in this Article.

ARTICLE 9

Obligations of Member States

The Member States shall co-operate in every way so as to assist the Centre in achieving its objectives. They shall in particular:

(a) Facilitate the timely collection, exchange and dissemination of climatic and meteorological data and information;

(b) Submit such reports, data and information as may be required by the competent organs of the Centre;

(c) Make available to the Centre training and research facilities on such terms and conditions as may from time to time be agreed with the appropriate organs of the Centre;

(d) Make available to the Centre national personnel on such conditions as may be agreed upon with the appropriate organs of the Centre;

ARTICLE 12

Resources of the Centre

1. The Centre shall derive its finances from contributions made by the Member Sttes as determined by the Conference of Ministers.

2. The Centre may derive further resources in cash or in kind from the United Nations and its specialized agencies, and such other institutions and organizations as may be interested in the activities of the Centre. Acceptance by the Centre of offers of such further assistance shall be consistent with the objectives of the Centre, subject to the provisions of this Constitution and be in accordance with the relevant provisions of the rules governing the financial management of the Centre.

ARTICLE 13

Amendments

This Constitution may, on the recommendation of the Joint Inter-Governmental Committee on Human Settlements and Environment be amended by the Conference of Ministers.

ARTICLE 14

Settlement of Disputes

Any question in dispute that may arise concerning the interpretation or application of any provision of this Constitution which cannot be settled by the parties concerned, shall be determined by the Board of Governors.

ARTICLE 15

Termination

1. This Constitution shall be of indefinite duration except that it may be terminated by a decision of the Conference of Ministers whereupon the Centre shall be deemed to have been dissolved.

2. In the case of the dissolution of the Centre in pursuance of the provisions of paragraph 1 of this Article, the Board of Governors shall make provisions for the orderly liquidation of the Centre.

ARTICLE 16

Entry into Force

This Constitution shall enter into force upon its adoption by the Conference of Ministers.

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